

REMARKS

Claims 1-11, 24-29, 33-38, and 40-45 are pending in the present application.

Claims 12-23, 30-32, 39, and 46-60 have been cancelled without prejudice or disclaimer to the subject matter contained therein. The Applicants reserve the right to file divisional applications directed to this cancelled subject matter.

Claims 1-11, 24, 25, 33-38, and 40-45 have been withdrawn from consideration as being drawn to a non-elected species. The Applicants respectfully submit that Claims 1-11, 24, 25, 33-38, and 40-45 should be entitled to consideration because, for the reasons set forth below, generic claim 26 is allowable over the prior art of record and each of these claims to the alleged additional species are written in dependent form and/or include all the limitations of allowable generic claim 26.

I. ARGUMENTS

A. Rejection under 35 U.S.C. §103

Claims 26-28 have been rejected under 35 U.S.C. §103 as being unpatentable over Yoshihara et al. (US-A-6,245,593) in view of Fujii et al. (US-A-6,429,506). This rejection under 35 U.S.C. §103 is respectfully traversed.

The presently claimed invention, as set forth in amended independent claim 26, is directed to a method for protecting a MEMS wafer during a dicing. The claimed method mounts, upon a backside of the MEMS wafer, a layer of dicing tape, the MEMS wafer having a plurality of MEMS structure sites on a front side and a plurality of through holes, each through hole corresponding to a MEMS structure site, the through holes being formed such that each through hole penetrates through the wafer from the backside of the wafer to the front side; mounts, upon the front side of the MEMS wafer, prior to dicing, a wafer cap to produce a laminated MEMS wafer, the wafer cap having a first side and a second side, the first side being opposite of the second side, the first side of the wafer cap being recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer, the second side of the wafer being substantially planar; dices the MEMS wafer into a plurality of dies such that each die includes a

MEMS structure site and a corresponding through hole; and mounts, upon the dicing tape, a layer of transfer tape.

The Examiner, in formulating the present rejection under 35 U.S.C. §102(e), alleges that Yoshihara et al. anticipates the presently claimed invention. More specifically, the Examiner alleges that Yoshihara et al. teaches mounting, upon a backside of a wafer (1), a layer of dicing tape (2), the wafer having a front patterned side and a plurality of through holes on a backside, the through holes providing a possible leak path from a backside of the wafer to the front patterned side of the wafer; dicing the wafer into a plurality of dies; and mounting, upon the diced layer of dicing tape, a layer of transfer tape.

However, the Examiner recognizes that Yoshihara et al. fails to teach a wafer cap having recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer. To meet this deficiency in Yoshihara et al., the Examiner proposes to modify the teachings of Yoshihara et al. with the teachings of Fujii et al. The Examiner alleges that Fujii et al. teaches a wafer cap having recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer. From this allegation, the Examiner concludes that one of ordinary skill in the art would find it obvious to combine the teachings of Yoshihara et al. and Fujii et al. to meet the limitations of the presently claimed invention. The Applicants, in view of the above amendments, respectfully traverse these allegations and the conclusion by the Examiner.

As set forth above, amended independent claim 26 sets forth that upon a backside of the MEMS wafer, a layer of dicing tape is mounted wherein the MEMS wafer has a plurality of MEMS structure sites on a front side and a plurality of corresponding through holes, each through hole corresponding to a MEMS structure site. Amended independent claim 26 further states that, upon the front side of the MEMS wafer, prior to dicing, a wafer cap is mounted to produce a laminated MEMS wafer, the wafer cap having a first side and a second side, the first side being opposite of the second side, the first side of the wafer cap being recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer, the second side of the wafer being substantially planar. Moreover, amended independent claim 26 sets forth that the MEMS wafer is diced into a plurality of dies such that each die includes a MEMS structure site and a corresponding through hole. Lastly, amended independent claim 26 sets forth that a layer of transfer tape is mounted upon the dicing tape.

In contrast, Yoshihara et al. fails to teach or suggest, as recognized by the Examiner, mounting, upon the front side of the MEMS wafer, prior to dicing, a wafer cap to produce a laminated MEMS wafer, the wafer cap having a first side and a second side, the first side being opposite of the second side, the first side of the wafer cap being recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer, the second side of the wafer being substantially planar, as set forth in amended independent claim 26.

With respect to Fujii et al., the teachings of Fujii et al. teaches a cap constructed from a flat planar sheet which is formed over a jig with recesses to form dents in the sheet (column 3, lines 38-58). From the process for constructing the cap as taught by Fujii et al., a cap is constructed wherein the cap has a first side with areas receding away from the MEMS structure sites on the MEMS wafer and away from the MEMS wafer.

However, this same process for constructing the cap as taught by Fujii et al., the cap is constructed wherein the cap has a second side, opposite of the first side, with areas receding towards the MEMS wafer. In other words, the second side of the cap of Fujii et al. is not substantially planar, as required by amended independent claim 26.

Therefore, contrary to the Examiner's conclusion, Yoshihara et al. and Fujii et al., singly or in combination, fail to teach, suggest, or render obvious mounting, upon the front side of the MEMS wafer, prior to dicing, a wafer cap to produce a laminated MEMS wafer, the wafer cap having a first side and a second side, the first side being opposite of the second side, the first side of the wafer cap being recessed in areas corresponding to locations of the MEMS structure sites on the MEMS wafer, the second side of the wafer being substantially planar, as set forth in amended independent claim 26.

With respect to dependent claims 27 and 28, the Applicants, for the sake of brevity, will not address the reasons supporting patentability for this individual dependent claim, as these claims depend directly from the allowable independent claim 26 for the reasons set forth above. The Applicants reserve the right to address the patentability of these dependent claims at a later time, should it be necessary.

Accordingly, in view of the amendments and reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the present rejection under 35 U.S.C. §103.

B. Rejection under 35 U.S.C. §103

Claims 29 has been rejected under 35 U.S.C. §103 as being unpatentable over Yoshihara et al. (US-A-6,245,593) in view of Fujii et al. (US-A-6,429,506) and Ohkawa et al. (US-A-5,360,873). This rejection under 35 U.S.C. §103 is respectfully traversed.

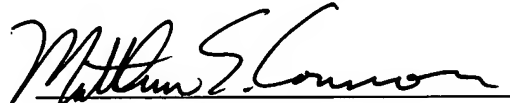
With respect to dependent claim 29, the Applicants, for the sake of brevity, will not address the reasons supporting patentability for this individual dependent claim, as this claim depends directly from the allowable independent claim 26 for the reasons set forth above. The Applicants reserve the right to address the patentability of this dependent claim at a later time, should it be necessary.

Accordingly, in view of the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the present rejection under 35 U.S.C. §103.

II. CONCLUSION

Accordingly, in view of the amendments and all the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the present rejections. Also, an early indication of allowability is earnestly solicited.

Respectfully submitted,



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